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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/148,750 11/05/93 CEZANNE

J 18  
EXAMINER  
BRINICH, S

ART UNIT PAPER NUMBER

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DATE MAILED: 01/26/95

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS  
Date of application: 11/05/93

3. Claims 1, 3-4, were 11-13 and 18-23.  
☒ This application has been examined ☐ Responsive to communication filed on \_\_\_\_\_ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I: THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input checked="" type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.      | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152.                  |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474.     | 6. <input type="checkbox"/> _____  |

Part II: SUMMARY OF ACTION

1. ☒ Claims 1-23 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☐ Claims 1-4, 7, 11-13, 18 & 21-23 are rejected.
5. ☐ Claims 5-6, 8-10, 14-17, & 19-21 are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☒ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_ Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_ has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

Art Unit: 2612

Part III DETAILED ACTION

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States:

1. Claims 1, 3-4, are 11-13 are rejected under 35 U.S.C.

§ 102(b) as being anticipated by Elko et al.

Elko et al. discloses (Abstract, Figure 6) a noise reduction processor for a microphone array which evaluates parameters and modifies microphone output signals in order to produce a modified array output signal (any output signal based on a modified microphone output signal is necessarily based on "one or more modified output signals and zero or more unmodified microphone output signals). In the final output of the microphone array, the nulls of the array to correspond to unwanted noise sources in the prescribed environment (so that sound from these sources has little or no effect on the final output signal).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Art Unit: 2612

Patentability shall not be negatived by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

3. Claims 2, 7, 18 and 22-23 are rejected under 35 U.S.C. § 103 as being unpatentable over Elko et al.

Re claim 2, Elko et al discloses a single iteration of parameter evaluation, modifying microphone output signals, and forming an array output signals in order to set microphone array nulls so that the correspond to noise sources in the prescribed environment. The use of multiple iterations of a sense input - process input - output results procedure allows refinement of the processing in response to the output in order to bring the ultimate output closer to what is desired. The use of iterated steps in Elko et al. in order to refine the output in this manner would be an expedient obvious to one of ordinary skill in the art.

Re claims 7, 18, and 22-23, Elko et al. does not specify the type of microphones used in the array. The use of standard cardioid, dipole, and/or omnidirectional sensors in order to fill this "black box", depending on which set of known directivity patterns will best enable the processing required to get the

Art Unit: 2612

desired directivity pattern for the entire array, would be an expedient obvious to one of ordinary skill in the art.

Allowable Subject Matter

4. Claims 5-6, 8-10, 14-17, and 19-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Flanagan, Kaneda et al, Hansen, and Fukumizu disclose examples of directional microphone arrays.

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The title is overly generic; some allegedly distinctive feature of the disclosed invention should be mentioned in the title.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Brinich whose telephone number is (703) 305-4390.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

smb

January 22, 1995

*Stephen Brinich*  
STEPHEN BRINICH  
PATENT EXAMINER  
ART UNIT 26